

STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN **REVISION 1**
Two Run Creek/ Etowah River
Coosa River Basin
April 28, 2006

Cities of Kingston, Euahlee, Bartow County

I. INTRODUCTION

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan addresses the general characteristics of the watershed, the sources of pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (*management measures*) to reduce pollutants, milestone schedules to show the development of the management measures (*measurable milestones*), and a monitoring plan to determine the efficiency of the management measures.

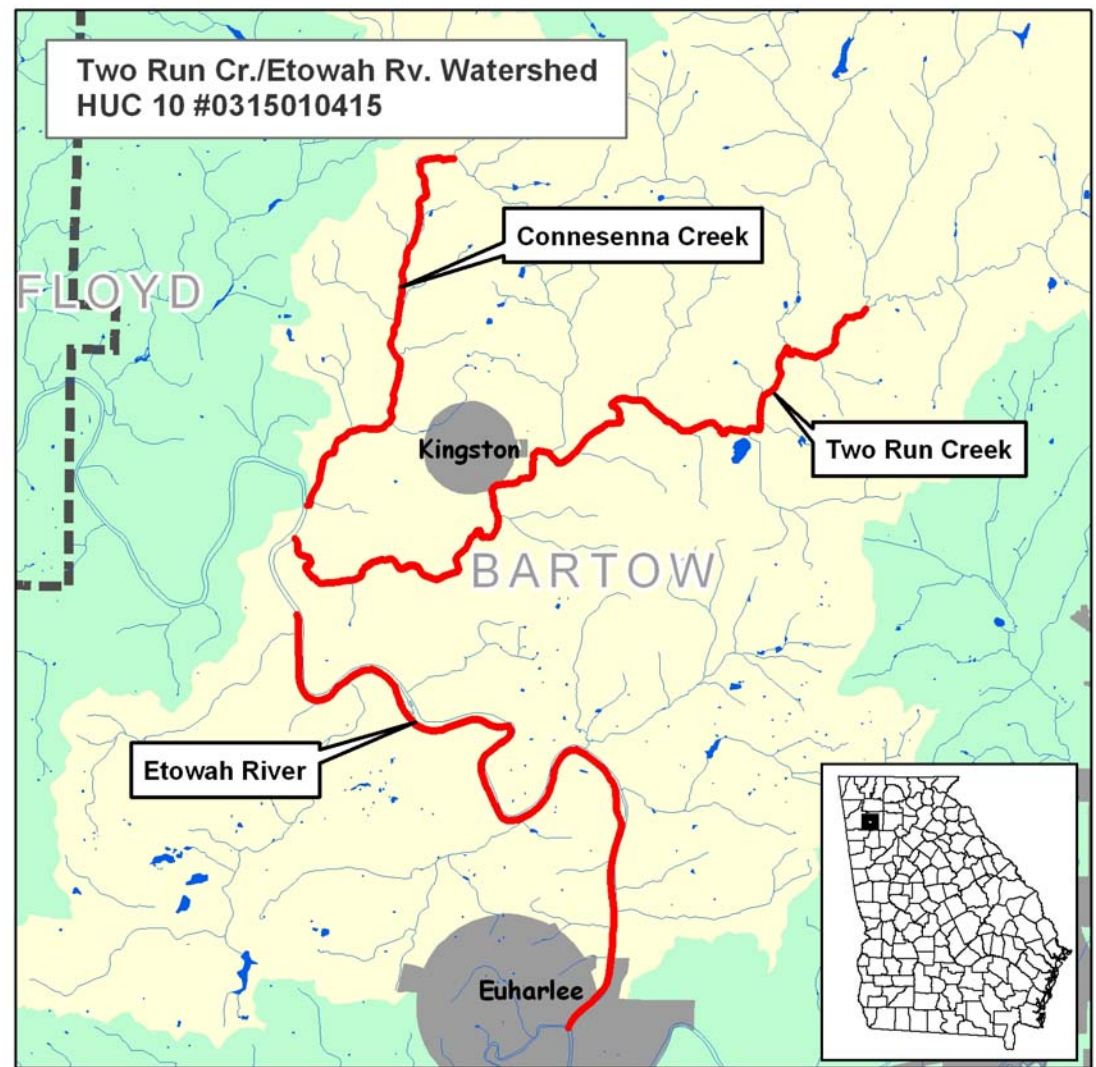


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Connesenna Creek	Etowah River Tributary (EPA)	Biota (Sediment)	CSA0000072
Etowah River	Euahlee Creek to US Hwy 411	Fecal Coliform Bacteria	CSA0000044
Two Run Creek	Clear Creek to Etowah River	Fecal Coliform Bacteria	CSA0000071
Connesenna Creek *	Etowah River Tributary	CFB (PCBs)	CSA0000037
Two Run Creek *	Clear Creek to Etowah River	CFB (PCBs)	CSA0000038
Etowah River *	Euahlee Creek to US Hwy 411	FCG (PCBs)	CSA0000104

* Plan will be written by GA EPD

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10 #0315010415. Include an updated overview of watershed characteristics. Identify new conditions and verify or correct information in the TMDL document using the most current data. Include the size and location of the watershed, political jurisdictions, and physical features which could influence water quality. Describe the source and date of the latest land cover/use for the watershed. Describe and quantify major land uses and activities which could influence water quality. See the instructions for more information on what to include.

Connesenna Creek (EPA) headwaters from Connesenna Spring near Connesenna Church in western Bartow County (4.0 miles) and runs southerly parallel to the CSX Railroad line and into the Etowah River. Field survey of creek indicated ongoing grading for land disturbing activities. These were most likely new home construction activities. No sources for 2001 sedimentation were observed. New road maintenance was observed at Old Rome Rd.

The creek was sampled at Old Rome Road near Kingston in 2001.

In 2000 Bartow County contracted with Kennesaw State University to conduct a watershed assessment as part of the watershed assessment and protection plan development requirements for existing and new wastewater treatment plants under NPDES (KSU, 2001). The study, with sampling location downstream of Highway 293 near Connasenna's confluence with the Etowah, indicated that Connasenna Creek had low turbidity and TSS values during wet events, low turbidity during dry events, and higher TSS during dry events. The habitat score for this creek was high as was the health of the fish community. General sources of habitat degradation were thought to be fine sediments from development or agriculture.

Land Use categories include the following, for a total of 10,600 acres: The majority (88.4%) of lands are forest, at 8,889 acres; 5.9% are agriculture at 594 acres; barren lands form 4.8% at 482 acres; and the following each form less than 1%, including commercial/industry, urban, water and wetlands (EPA, 2004). The data on land use are taken from EPA publication *Total Maximum Daily Load (TMDL) for Sediment in Tallapoosa and Coosa River Basins* (2004). This is the most recent land use data available for this watershed. New land use data will be collected for the 2007 Bartow County Comprehensive Plan and can be used as an update to this plan. Some new home construction seen. Land use remains unchanged for the most part.

Etowah River (Euharlee Creek to US Hwy 411) is a 10-mile segment that begins in the Blue Ridge Mountains near Dahlonega, Georgia and flows about 150 miles in a southwesterly direction to its confluence with the Oostanaula River at Rome, Georgia. Although area remains mostly rural or low-intensity residential, new home construction is ongoing. The entire county is experiencing a high percentage of residential growth. Plant Bowen, a coal-burning electrical plant, is a large employer in the area and located just outside the watershed. Plant Bowen has planted over 100 acres of Pine trees in its large land holdings in the area as part of a climate challenge program.

Field survey indicated area was mostly forest and pasture, with some row cropping of corn and soybeans. The river had a clear to greenish appearance, good flow, and good tree buffer to creek banks. Pasture for cattle grazing, corn row cropping, hay fields being cut, cattle in pasture to north side of the river were seen. Birds seen in area, and wildlife could access the river along the banks. Some new home construction was seen. For 2005, the Etowah was scheduled to be sampled at Hardin Bridge Road near Euharlee.

Land Use categories include the following for a total of 329, 401 acres: The majority (71.6%) of lands are forest, at 235,760 acres; 10.6% are pasture/hay at 34,881 acres; row crops form 7.2% at 23,649 acres; 9.5 percent of lands are low intensity residential at 16,580 acres; 1.7 percent of lands are transitional at 5,461 acres; 1.1% of lands are high intensity commercial/industrial/transportation at 3,567 acres; and the following each form less than 1%, including high intensity residential, other grasses, woody wetlands, open water, quarries/strip mines/gravel pits, emergent herbaceous wetlands, and bare rock, sand, and clay (EPA, 2004). The data on land use are taken from Georgia DNR publication *Total Maximum Daily Load Evaluation for Fifty-Eight Stream Segments in the Coosa River Basin for Fecal Coliform* (2004). This is the most recent land use data available for this watershed. As the comprehensive plan for Bartow County is completed in 2007 more recent land use data can be used to update these plans if available.

Two Run Creek (Clear Creek to Etowah River) headwaters in Bartow County west of White, Georgia and runs southwesterly towards Kingston, Georgia and into the Etowah River west of Kingston and north of US Route 411. The creek segment is 8.3 miles long within Bartow County. Field survey indicated intermittent tree buffers, drainage of pastures along creek, and some indications of development (silt fencing). Creek alternated between muddy and clear appearance.

The creek was sampled at Reynolds Bridge Road in 2001.

In 2000 Bartow County contracted with Kennesaw State University to conduct a watershed assessment as part of the watershed assessment and protection plan development requirements for existing and new wastewater treatment plants under NPDES (KSU, 2001). Sampled at Reynolds' Bridge Road for the Lower Two Run and between US 41 and I-75 for the Upper Two Run, the survey indicated land use in transition between US 41 and I-75. Downstream the creek was less developed, a mix of agriculture and forest. The creek was sampled for fecal coliform, finding levels below state water quality standards, and for enterococci, finding levels above EPA' standard. Fecal coliform was not significantly higher during wet events, although enterococci was high during these events compared to dry, suggesting that the bacteria was introduced by runoff or by resuspension of bacteria in the sediment. Sources indicated for Lower Two Run were vegetation, animal, and human. For Upper Two Run, bacteria indicated bird waste as a source, probably poultry waste.

Land Use categories include the following for a total of 32,511 acres: The majority (79.9%) of lands are forest, at 25,988 acres; 12.4% are pasture/hay at 4,027 acres; row crops form 3.7% at 1,217 acres; 2.0 percent of lands are transitional at 637 acres; and the following each form less than 1%, including high intensity commercial/industrial/transportation, high intensity residential, other grasses, woody wetlands, open water, and quarries/strip mines/gravel pits (EPA, 2004). The data on land use are taken from Georgia DNR publication *Total Maximum Daily Load Evaluation for Fifty-Eight Stream Segments in the Coosa River Basin for Fecal Coliform* (2004). This is the most recent land use data available for this watershed. As the comprehensive plan for Bartow County is completed in 2007 more recent land use data can be used to update these plans if available. Land use has not changed greatly.

Erosion and Sedimentation Control:

Bartow County is a Local Issuing Authority for E & S permitting of land-disturbing activities which are required to submit an NOI under the NPDES General Permit for Construction Activity. Cities of Kingston and Euahlee submit such permits to EPD Mountain District for approval.

Bartow County revised its E & S Control ordinance in 2002. It meets current Georgia E & S requirements. This ordinance applies to land disturbing activities on one acre of land or more. It is administered by the Bartow County Engineer through the Planning and Zoning Department. It is

currently being reviewed and updated to include recommendations developed by a regional habitat conservation plan, the Etowah Habitat Conservation Plan. The Etowah Habitat Conservation Plan is a joint effort of municipalities, water authorities, developers, industry, the University of Georgia, Kennesaw State University, Georgia DNR, the US Fish and Wildlife Service, and others in the Etowah River watershed to protect threatened and endangered species of darter by developing a regional conservation plan. The plan allows included jurisdictions to be in compliance with the Federal Endangered Species Act and to obtain an Incidental Take Permit from the US Fish and Wildlife Service for development activities. Additionally the County is currently reviewing and updating all regulations and processes in its development code.

According to the Bartow County Watershed Assessment and Protection Plan, there are six standard operating procedures required of local governments for erosion and sediment control. These include a bonding program for workers, a requirement for semi-monthly reporting, weekly county inspections at each site, addition of erosion and sedimentation to the building inspectors' checklist, two required pre-construction meetings with site planner and crew, and lastly, the designation of an on-call erosion and sedimentation expert for the project. Some of these requirements may be revised in light of the recent erosion and sedimentation certification requirements.

Euharlee has adopted one of the six ordinances of the Metropolitan North Georgia Water Planning District: the Euharlee Soil Erosion and Sediment Control Ordinance, including stream buffer requirements, which was adopted January 2004 and will be enforced by the City of Euharlee's Code Enforcement Officer.

House Bill 285 requires state certification in E & S Control for anyone involved in the following activities: land development, design, review, permitting, construction, monitoring, inspection, or any land-disturbing activity in Georgia (Georgia Soil and Water Conservation Commission, 2005). This certification is done through training by the Georgia Soil and Water Conservation Commission in consultation with Georgia Environmental Protection Division and the Stakeholder Advisory Board. The GSWCC also has updated requirements for E&SC plans to be submitted with each project. Certification requirements apply to all such persons in Bartow County. Certification is offered through the Rolling Hills Regional Conservation and Development Council (RC & D) for Bartow County. The County itself has held one class for Level 1A certification in December 2005; other certification level training classes are planned.

Georgia Forestry Commission Best Management Practices

The Forestry Commission has implemented best management practices on its lands to reduce sedimentation and erosion from silviculture practices. The Georgia Forestry Commission also provides education, technical and financial assistance through cost-share programs to private landowners especially in the Forestland Enhancement Program, a part of the 2002 Farm Bill. Ongoing Georgia Forestry Commission activities include the following programs.

- Federal Clean Water Act Section 404: GFC received referrals from EPA for compliance determinations in situations involving forestry. It requires normal ongoing agricultural and silvicultural practice to adhere to BMPs and 15 baseline provisions for road construction and maintenance in and across waters of the US including lakes, rivers, perennial and intermittent streams, wetlands, sloughs in order to qualify for the exemption from the permitting process.
- Georgia's Best Management Practices: A GFC program to inform landowners, foresters, timber buyers, loggers site preparation and reforestation contractors and others involved with silvicultural operations about commonsense, economical effective practices to minimize nonpoint source and thermal pollution. GFC encourages and monitors compliance and conducts a complaint resolution program.

- Georgia Forestry Commission Monthly BMP Assurance Examination: In an effort to document “reasonable assurance” that water quality will be proactively protected during regular ongoing silvicultural operations, the GCF will offer a monthly BMP assurance examination of active sites. All active of ongoing sites will be identified either through monthly air patrol flights, courthouse records, riding the roads, notification or by landowners. Sites located within watersheds of specific biota (sediment) impaired streams will be given a higher priority to identify and conduct examinations.
- Memo to the Field: Application of BMPs to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast (Silviculture). Although overseen by the EPA/ US Army Corps of Engineers, cases are normally referred to GFC to make the initial determination. It identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.

Department of Natural Resources Best Management Practices

The Department of Natural Resources, Wildlife Management Division provides outreach to landowners on prevention of soil erosion and sedimentation from land-disturbing activities contributing to habitat destruction, advises landowners of best management practices and habitat development for increased wildlife on their property, and encourages landowners to implement conservation practices on their lands through the NRCS.

2002 Farm Bill, US Department of Agriculture Natural Resources Conservation Service and Farm Service Agency

The Farm Security and Rural Investment Act of 2002 (Farm Bill 2002) funded conservation practices for farmers and ranchers with a focus on environmental issues by making existing programs simpler as well as funding new programs. The 2002 Farm Bill enhances the long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality. These include the following programs administered by the US Department of Agriculture, Natural Resources Conservation Service and Farm Service Agency. The USDA Natural Resources Conservation Service in Bartow County works with farmers to develop and implement conservation best management practices on their operations. The Environmental Quality Incentives Program (EQIP) program is one such method. Many applications for the 2006-2007 fiscal year are being processed. Often, applications for best management practices through these programs exceed funding capability of the program. EQIP is a voluntary program that provides technical and cost-share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health through the federal Farm Bill (2002). EQIP provides a 50% cost share with a possibility of additional payments.

- The Federal Farm Bill (Swampbuster Ag) prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture.
- The Water Bank Act preserves, restores and improves wetlands of the Nation and thereby conserves surface waters to preserve and improve habitat for migratory waterfowl and other wildlife resources to retire lands not in agricultural production to enhance the natural beauty of the landscape and to promote comprehensive and total water management planning. 10-year contracts with landowners to preserve wetlands and retire adjoining agricultural lands. Annual payments may be made to participating owners, and the costs of conservation measures may be shared. Total annual payments to owners were limited to \$10 million in any year.
- The Conservation of Private Grazing Land Program will offer technical assistance opportunities for better grazing land management. Projects for improving water quality include: protecting soil from erosive wind and water; conserving water; providing habitat for wildlife; sustaining forage and grazing plants. This is not a Cost-Share Program.

- Conservation Security Program (CSP) is the first program that rewards farmers and ranchers for high levels of environmental stewardship. Producers on cropland, orchards, vineyards, pasture and range may apply for CSP regardless of size, type of operation, or crops produced. Land in other cost share programs is not eligible. CSP will first be offered in watersheds with greatest potential for improving water quality, soil quality and grazing land condition. In 2005, the four watersheds of focus will be the Ichawaynochaway, Kinchagoonee-Muckalee, Middle Flint, and Upper Ochlockonee. An enhancement example is to install a riparian buffer. There are three tiers of involvement, which result in different expectations and cost share opportunities.
- Environmental Quality Incentives Program (EQIP) is a voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health. It is a 50% cost share with possible additional incentive payments.
- Wetlands Reserve Program (WRP) provides technical and financial assistance to landowners to enhance wetlands degraded by farming or draining. There are three options with WRP to receive funds that have differing time agreements and easements resulting in different cost share. In all programs participants control access to the land, may lease or use land for hunting, fishing, and other passive recreational activities. Compatible uses are allowed as long as they do not degrade the wetland. Permanent Easement pays appraised value of land (\$2,000/ acre cap) and 100% of costs of restoration. The 30-Year Easement pays 75% of appraised value of land and 75% of restoration costs. The Restoration Cost Share Agreement pays 75% of restoration costs, no easement on the property.
- The Conservation Reserve Program (CRP) provides technical assistance, rental payments and cost share funding to address specific natural resource concerns including: protection of ground and surface waters, soil erosion and wildlife habitat. Eligible practices include tree planting, grassed waterways, wildlife habitat buffers, and shallow water area for wildlife and filter strips. An annual rental payment is given for land taken out of production and 50% cost share for practice installation.

Metropolitan North Georgia Water Planning District Model Ordinances

Bartow County is a member of the Metropolitan North Georgia Water Planning District, which was created by the Georgia General Assembly to establish policy, create plans and promote intergovernmental coordination of all water issues in the area from a regional perspective. The county is included in the Metropolitan Water Planning District's Watershed Management Plan, which includes six protection strategy areas:

- Point Source Management
- Storm Water Management
- Total Maximum Daily Loads (TMDLs)
- Watershed Improvement
- Intergovernmental Coordination
- Long-term Monitoring

The MNGWPD Watershed Management Plan required each member to adopt these six model ordinances:

- Ordinance for Post-Development Stormwater Management for New Development and Redevelopment
- Floodplain Management/Flood Damage Prevention Ordinance (in review)
- Conservation Subdivision/Open Space Development Ordinance
- Illicit Discharge and Illegal Connection Ordinance
- Litter Control Ordinance

- Stream Buffer Ordinance

Bartow has adopted five of six Model Storm Water Management Ordinances that address Post Development Storm Water Management for New Development and Redevelopment, Conservation Subdivision/ Open Space Development, Illicit Discharge and Illegal Connection, Litter Control, and Stream Buffer Protection as required by Georgia EPD in MS4 Phase II Permit Renewals. The District Plan also addresses municipal good housekeeping practices to control non-point source pollution; improved enforcement of erosion and sedimentation control; storm water management for transportation projects; and education and public awareness activities. Bartow County has not adopted the District's Floodplain Management/Flood Damage Prevention Ordinance, as it is being reviewed by the District. Bartow's current flood plain ordinance meets national flood insurance requirements and was revised as of 2000.

Existing floodplain management ordinances will be revised as counties participate in updating their flood hazard regions through the National Flood Plain Insurance Program/ Georgia DNR Floodplain Management Office Flood Map Modernization Program.

Bartow County Board of Tax Assessors is considering a proposed tax relief program for property owners who place conservation easements on all or part of their properties, especially for greenspace on timberland.

The City of Euahlee has adopted one of the six ordinances of the Metropolitan North Georgia Water Planning District: the Euahlee Soil Erosion and Sediment Control Ordinance, including stream buffer requirements, which was adopted January 2004. The other proposed ordinances which will be adopted by March 1, 2006 are as follows: Post-Development Stormwater Management, Floodplain Management, Conservation Subdivision/Open Space Development, Illicit Discharge and Illegal Connection, and Litter Control. These ordinances will be enforced by the City of Euahlee's Code Enforcement Officer.

The City of Kingston has not adopted the ordinances of the Metropolitan North Georgia Water Planning District. Education and outreach components of these ordinances as adopted by Bartow County extend to the City of Kingston but ordinances are under the jurisdiction of the city.

Bartow County Watershed Assessment and Protection Plan

Between 1990 and 2000 Bartow County experienced a 36% growth rate; subsequently the County began the Bartow County Growth Management Plan, completed in 1997, which was based on input from local residents and economic development experts and which suggested specific growth management strategies including expansion of water and wastewater treatment operations.

In 2000 Bartow County contracted with Kennesaw State University to conduct a watershed assessment as part of the watershed assessment and protection plan development requirements for existing and new wastewater treatment plants under NPDES. This assessment indicated that overall, streams in Bartow County were in "moderately good condition relative to other systems in the Atlanta metropolitan area (KSU, 2001)." However, the report pointed out that fecal waste among other impairments was present in individual streams including Lower Pumpkinvine Creek, Lower Stamp Creek, Salacoa Creek, Lower Euahlee Creek, Upper Two Run Creek, Upper Pettit Creek, Cedar Creek, Pine Log Creek, and Richland Creek (KSU, 2001). Some of these creeks were placed on the 2004 303 (d) impaired streams list for fecal coliform bacteria. Pettit Creek (Upper and Lower) was tested for fecal coliform and found to be in keeping with state water quality standards. Enterococci was measured as well. Fecal coliform was not elevated during wet events compared to dry events but enterococci was elevated in wet events, suggesting that runoff or

resuspension of bacteria previously in streambed sediment had occurred. Study suggested that sources were mostly likely a combination of bird, human, and vegetation.

Bartow County is considering expansion of the Bartow County Wastewater Treatment Plant in 2006-2007 and has conducted a county watershed assessment and developed the Bartow County Watershed Protection Plan as part of its expansion process to meet NPDES permitting standards. The watershed assessment results relate directly to the TMDL initiative.

Bartow County's Watershed Assessment and Protection Plan strategies were developed according to the Metropolitan North Georgia Water Planning District (District) Water Management Plan of 2003. The protection plan strategies include point source management, storm water management, the Total Maximum Daily Load initiative, watershed improvements, intergovernmental coordination and long-term monitoring. These strategies are covered as part of the District's Water Management Plan as well as the TMDL implementation plans; the NPDES Phase II for MS4's also requires implementation of the majority of these strategies.

Stormwater Management

Bartow County has an NPDES-permitted Small Municipal Separate Storm Sewer System (MS4) and is subject to the Phase II Stormwater Rules. These extended Phase II permitting rules include six parameters that deal with water quality including 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Runoff Control; 5. Post-Construction Runoff Control; 6. Pollution Prevention and Good Housekeeping. Bartow County's NOI for its NPDES Phase II Stormwater Permit for a small MS4 was approved in 2005. The County's MS4 permit does not apply to Euahlee or to Kingston. These municipalities have not been required to submit a Phase II NOI for an NPDES MS4 permit.

Components of Bartow County's NPDES Phase II Stormwater Management Plan involving Public Education and Outreach include the following:

- School System Stormwater Presentations provided yearly to teachers, students in county and city elementary and middle grades by the Keep Bartow Beautiful Coordinator;
- E & S Training Workshop on appropriate measures to control runoff and pollution provided biannually to the Bartow County Homebuilders' Association coordinated by the Bartow County Director of Engineering;
- Speaker's Bureau to speak on stormwater topics to area civic groups, with speakers to include County Administrator, Bartow County Water Superintendent, Stormwater personnel, and Keep Bartow Beautiful Coordinator;
- Stormwater Educational Materials, including a variety of flyers and pamphlets on E&S practices for homebuilders, new homeowners, and other topics such as septic system maintenance, xeriscape landscape plans, and proper fertilizer/pesticide application, developed by the Clean Water Campaign, P2AD, and EPA;
- Stormwater Management web page on the Bartow County Engineering Department's web space to include lawn and garden activity tips, water conservation, household waste disposal, household recycling, septic system maintenance, hazards of illicit dumping, and others;
- Newspaper Column on homeowners' stormwater pollution prevention responsibilities to be published quarterly in the Daily Tribune, written by the Bartow County Extension Agent.

Bartow County's Stormwater Management Plan includes 30 best management practices which include education and outreach in schools, to homeowner's associations, to the general public in brochure format, as well as news articles in the local paper dealing with stormwater

management, volunteer stenciling of storm drains, and stream cleanup. These BMPs are carried out in cooperation with the County Extension Service, Keep Bartow Beautiful, the Boy and Girl Scouts, the County Engineer, and others in the County.

Bartow County is mapping stormwater drainage outfalls throughout the county to remain in compliance with its Phase II MS4 stormwater permitting. In 2006 100% of the county's stormwater outfall mapping is scheduled to be completed.

Etowah Habitat Conservation Plan

The Etowah Habitat Conservation Plan reflects the work done by municipalities, water authorities, developers, industry, the University of Georgia, Kennesaw State University, Georgia DNR, the US Fish and Wildlife Service, and others in the Etowah River watershed to protect threatened and endangered species of darter by developing a regional conservation plan. The plan, including model ordinances and policies, allows included jurisdictions to be in compliance with the Federal Endangered Species Act and to obtain an Incidental Take Permit from the US Fish and Wildlife Service for development activities in the watershed, excluding agriculture and forestry. Ordinances and policies for implementation include:

- Stormwater Ordinance and Better Site Design
- Runoff Limits Program
- Erosion and Sedimentation Control Standard Operating Procedures
- Mass Grading Ordinance
- Stream Buffer Ordinance
- Road Crossing Guidelines
- Utility Crossing Guidelines
- Conservation Subdivision Ordinance
- Water Supply Planning

Existing municipal ordinances covering these areas can be updated. Revisions to the Metropolitan North Georgia Water Planning District Model Ordinances were recommended by the Etowah HCP subcommittees, as were revisions to the Bartow County Watershed Assessment and Protection Plan.

Specific areas of concern to the Etowah River identified by the Etowah Regional Aquatic Habitat Conservation Plan, and the corresponding actions taken by the county to address them, include:

- Poor riparian buffers
- Point sources
- Construction
- Channel erosion
- Historic sediment
- Impervious surfaces and storm water runoff
- Livestock
- Invasive Species
- Water Reservoirs

Bartow County has adopted the Metro North Georgia Water Planning District's model stormwater ordinance as revised by the Etowah HCP. The County is in the process of coordinating other existing ordinances with review of the Etowah HCP. Yet other revisions and ordinances dealing with runoff limits, road and utility crossings, are still being developed by the Etowah HCP.

Coosa River Basin Modeling Project (Georgia DNR EPD)

Georgia DNR EPD and USEPA are in the process of conducting a monitoring project to study the accuracy of the model developed for the Coosa River Basin. Monitoring is ongoing in 2005-2006 on the Coosa River and its tributaries. Data will be incorporated into the Total Maximum Daily Load (TMDL) for dissolved oxygen. The Coosa River Modeling work will be done by the Georgia DNR EPD in 2006 and 2007. A final model will link the Coosa River model and the Lake Weiss model. The combined models will evaluate oxygen demanding loads, nutrient loads, and temperature effects for heat loads, on dissolved oxygen (DO) concentrations in the Coosa River basin. The following data will be collected in separate modules:

- Watershed flow and temperature data
- Continuous water quality monitoring
- Water quality sampling
- Chlorophyll *a* sampling
- Wastewater treatment facility sampling and data collection (module 5)
- DO and temperature depth profiles
- Basin-wide phosphorus data
- Specialized studies
 - Reaeration measurements
 - Sediment Oxygen Demand measurements
 - Long-Term Biochemical Oxygen Demand (BODs)
 - Dye studies

Sites on the listed segment of Etowah River will be included in the following testing modules: Flow and Temperature; Continuous Water Quality Monitoring; Water Quality Sampling (BOD, DO, Temp, TKN, NH₃, NO₂- NO₃, total P, ortho-phosphate, TOC, conductivity, and Ph); Chlorophyll A. Two Run Creek will be sampled for Flow and Temperature; and Water Quality Sampling (BOD, DO, Temp, TKN, NH₃, NO₂- NO₃, total P, ortho-phosphate, TOC, conductivity, and Ph).

Module 1: Watershed Flow and Temperature Data. This module includes the installation and annual operation and maintenance of watershed stream flow gages with temperature recorders, for two years. The data from these gages will be used either directly as model input or to estimate tributary input data for ungaged streams (Georgia DNR EPD).

Module 2: Continuous Water Quality Monitoring. Continuous water quality monitors will be installed and maintained for the study period at a number of tributary and mainstem locations. Continuous water quality monitors will be installed on the Conasauga River at the USGS gaging stations at Eton and downstream from Carters and Allatoona Dams to collect upstream boundary condition data necessary for EPD RIV-1. The monitors will record DO, temperature, conductivity, pH, and depth at hour intervals (EPD).

Module 3: Water Quality Sampling. This module includes the collection and analysis of discrete water quality samples at locations on the Coosa River mainstem and tributaries from Allatoona Dam on the Etowah River, Carters Lake on the Coosawattee River, and the USGS Eton gage on the Conasauga River to the George/Alabama State Line. The data collection will include discrete mainstem and tributary water quality sampling. The samples will be analyzed for carbonaceous and total BOD₅ (inhibited and uninhibited), DO, temperature, TKN, NH₃, NO₂-NO₃, total phosphorus, ortho-phosphate, TOC, conductivity, and pH. Flow measurements will be made at the time of sample collection (Georgia DNR EPD).

Module 4: Chlorophyll A. Periodic collection of chlorophyll A data on tributaries.

Module 5, Wastewater Treatment Facility Sampling and Data Collection, will include discharge monitoring reports (DMRs) and/or operating monitoring reports (OMRs) data from wastewater treatment plants and sampling of mainstem and tributary dischargers. The additional sampling will be done as a quality assurance check for data given by the dischargers (Georgia DNR EPD).

Module 8: Special Studies. This module includes several specialized studies including reaeration, sediment oxygen demand (SOD), long-term BOD tests, and dye studies. River, tributary and selected wastewater treatment plant effluent samples will be collected for long-term BOD analysis during the field surveys. Long-term BOD analyses will include periodic testing of nitrogen components to determine possible nitrification reactions. Aged river water will be used as dilution water, when necessary. Samples will be collected and analyzed from each location for both monitoring years (Georgia DNR EPD).

Other Watershed Activities

The Northwest Georgia Regional Water Resources Partnership (NGRWRP) was created in 2002. The NGRWRP is an organization of water permit holders, local governments, industry, environmental, and other advocacy entities in Northwest Georgia with an interest in water issues (North Georgia Regional Development Center, 2005). The purposes of the Partnership are to monitor and contribute to the development of federal, state, and local water policy; educate the citizenry on water related issues; seek funding and facilitate the development of regional water-related assessment and planning activities; and coordinate the activities of federal, state, and local entities (NGRDC, 2005). Gene Camp, Bartow County Water Department Superintendent, serves on the partnership's executive committee.

Bartow County is also a Yellow Ribbon-level member of the P²AD Partnership and has committed to a two-year effort (2004-2006) with Georgia Institute of Technology's Economic Development Institute to develop an Environmental Management System Program. The Yellow Ribbon level signifies that a county or other member is being proactive in addressing environmental impacts of development. The City of Cartersville and Bartow County continue to have a good working relationship in areas of water quality. City and county have cooperated in various water quality projects including the Etowah Habitat Conservation Plan, the Bartow County Watershed Assessment, Greenspace Committee, and Lake Allatoona Preservation Authority projects.

Rolling Hills Resource Conservation and Development Council conducts the Envirothon, a yearly competition for high school students, testing skills and knowledge of aquatics including water quality and other environmental topics. District and State competitions will be in March 2006. Other projects are in the proposal stages.

Adopt-A-Stream, in conjunction with Coosa River Basin Initiative (CRBI), conducts ongoing water quality chemical and biological volunteer training and monitoring, stream clean-ups, stream bank and habitat restoration, and visual stream surveys in Bartow County. Testing for fecal coliform is not practical at this time.

Get the Dirt Out is a project of the Coosa River Basin Initiative which provides volunteer training for construction site inspection and identification of failure to use BMPs in construction activities. The project was implemented in March 2005 and covers the Northwest Georgia area of the Coosa River Basin.

Keep Bartow Beautiful runs several education and outreach programs including the following: Teacher training for Waste In Place, Project WET (Water Education for Teachers), and Enviroscope non-point source pollution using tabletop models; Stormwater-related presentation materials provided to schools; and a Speakers' bureau to provide outreach on storm water issues to local civic groups. Other projects are in the proposal stages. TREESBartow is a related program to encourage tree conservation in the county. A recent project is Springbank's new tree identification trail; proposed projects include an educational Earth Day event with 200 Adairsville Middle seventh-graders. Community cleanups are scheduled for April 2006.

Rivers Alive river cleanups were done in October 2005 on Connasenna Creek. Partners included Keep Bartow Beautiful, US Army Corps of Engineers, and EPD Mountain District. The target audience for this outreach and clean-up event was high school students. The cleanup efforts, which will become an annual event, take place in other locations as well, and satisfy education and outreach requirements for Bartow County's NOI. A River Festival culminates the event.

Keep Bartow Beautiful has a volunteer storm drain stenciling program ongoing since 2004 which is targeted to older developments in the city of Cartersville and urbanized areas served by the MS4. New residential developments must have storm drain stenciling done by the developer.

Bartow County Greenspace Committee acquires and preserves riparian buffers in Bartow County. This steering committee was formed in 2000 in response to Governor Barnes' greenspace initiative. Criteria for land purchases in the county include the following:

- Land should help protect waterways and watersheds;
- Land should have historical or biological importance- for example, the site of an old Indian village, or a swampland or wetland area;
- Area should be beneficial to wildlife;
- Area should link other areas, allowing for wildlife corridor; and
- Land should be affordable for the county program.

Greenspace lands will be used for recreation with walking trails, and will feature restored riparian buffers and other conservation measures. The committee is funded by SPLOST funds. Proposed purchases include a tract on the South bank of the Etowah between Pumpkinvine Creek and Paga Mine Road; and property on Leake Mound, currently in the process of a historical impact study by Southern Research, Historic Preservation Consultants, Inc. The Leake Site is thought to predate the Etowah Indian Mounds by a thousand years.

Connesenna Creek

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Connesenna Creek	Etowah River Tributary (Bartow County) (EPA)	6	Fishing	NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Biota (Sediment)	No degradation of fish community	<ul style="list-style-type: none"> • Road Crossings • Agriculture (Row Cropping) • Bare ground • Silviculture 	85 percent

Etowah River

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Etowah River	Euharlee Creek to US Highway 411 (Bartow County)	10	Fishing	NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal Coliform Bacteria (FC)	1,000 per 100 ml (geometric mean November- April) 200 per 100 ml (geometric mean May-October)	Wildlife Agricultural/Livestock <ul style="list-style-type: none"> Animal grazing Animal Access to streams Application of manure to pastureland and cropland Urban Development <ul style="list-style-type: none"> Leaking septic systems Land Application Systems Landfills 	2 percent

Two Run Creek

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Two Run Creek	Clear Creek to Etowah River (Bartow County)	10	Fishing	NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal Coliform Bacteria (FC)	1,000 per 100 ml (geometric mean November- April) 200 per 100 ml (geometric mean May-October)	Wildlife Agricultural/Livestock <ul style="list-style-type: none"> • Animal grazing • Animal Access to streams • Application of manure to pastureland and cropland Urban Development <ul style="list-style-type: none"> • Leaking septic systems • Land Application Systems • Landfills 	79 percent

IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the sources of impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include:

- Involvement of stakeholder group
- Field surveys
- Review of land cover data
- Evaluation of sources

Verification of the significance and extent of the sources or causes of each impairment listed in the TMDLs was done through a series of field surveys and stakeholder meetings. The TMDLs list three probable causes of fecal coliform contamination: Wildlife, Urban Development, and Agricultural/ Livestock.

The impaired stream segments were driven to verify potential sources or causes of impairment. A series of stops allowing visual field surveys of Connesenna Creek, Two Run Creek, and this segment of the Etowah River, were conducted to visually evaluate stream condition including turbidity, sedimentation and erosion, stream bank condition, stream bed condition, depth, flow, and color. Field surveys also noted the presence of any factors thought to contribute to non-point sources of fecal coliform loadings including wildlife, animal grazing, animal access to streams, application of manure to pastureland and cropland, possibility of leaking septic systems, Land Application Systems (LAS), CAFOs, and landfills.

This data from field surveys was combined with GIS data and EPD listings of NPDES dischargers as well as information from stakeholders. Local stakeholder input was gathered in a series of stakeholder meetings; contacts with local government officials and other individuals were also used to determine actual causes or sources of stream impairment. Photographs of sources seen in the field surveys and corroborated by stakeholders are found in Appendix C.

Biota/Sediment:

Connesenna Creek area has some land disturbing activities on-going along this segment along Connasenna Road and Old Rome Road. Ongoing grading for land-disturbing activities was observed. No sources for sedimentation reported in 2001 were observed. New road maintenance was observed at Old Rome Road.

Fecal Coliform Bacteria:

Point Source

Connesenna Creek --There is a listed CAFO within the watershed drainage area for Connasenna Creek, even though it is not impaired for fecal coliform bacteria. The site was the old and now closed Gold Kist Swine Farm located on Tom Jones Road. There are no NPDES or LAS dischargers, mining operations or landfills within this area.

Etowah River segment—There is one listed landfill east of the river in Bartow County used by a private company. The Anheuser-Busch LAS site, permit # GA01-568, is located to the northeast. It has no discharge, but instead is permitted at a specific application flow rate. The Southeast Bartow County WPCP, Permit # GA0037664, has an average monthly discharge permit for 0.1 MGD; demand is at 59% of that limit.

Two Run Creek—There are no CAFOs, no mining operations, no LAS dischargers and no listed NPDES discharger to the creek within the impaired segment. The Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge. This location is north of the listed segment. The WPCP has an average monthly discharge permit for 0.1 MGD. One mining operation is located upstream of the watershed, Stone Man Inc., permit # GA0047635. Please see photographs 1. 0315010415 Two Run Creek: Browns Loop-South: Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge; and 0315010415 Two Run Creek: Browns Loop-South: Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge 2 of 2.

Non Point Sources

Agricultural- Livestock: This segment has several cattle and horse grazing pastures that may impact the watershed. Two Run Creek especially drains the pastures around it. Two Run Creek actually had good tree buffers at all field survey sites. Cattle were fenced out of the stream in places, but appeared to have access in other places. Please see photographs 3. 0315010415 Two Run Creek: Browns Loop-South: Cattle grazing in pastures along stream, have stream access; 4. 0315010415 Two Run Creek: Hwy 293 Bridge- Creek drains pasture seen in background; and 5. 0315010415 Two Run Creek: Browns Loop- South- Stream bank accessible to wildlife, cattle fenced out of stream.

Wildlife: A large portion of stream bank in this segment is freely accessible by wildlife such as deer, wild turkeys, and waterfowl. Statewide statistics indicate deer population exceeds 32 deer per square mile of forested habitat (GADNR, 2005). Deer and other wildlife could have an impact on the fecal loading. Deer are transient, but are highly likely to be found in this watershed. Please see photograph 10. 0315010415 Etowah River, Euharlee Creek to US Highway 411: Hwy 411 Bridge crossing- River bank accessible to wildlife; and 9. 0315010415 Etowah River, Euharlee Creek to US Highway 411: Euharlee Road- River bank accessible to wildlife. Also see photographs 5. 0315010415 Two Run Creek: Browns Loop South- Stream bank accessible to wildlife and 7. 0315010415 Two Run Creek: Reynolds Bridge Rd- Stream bank accessible to wildlife.

Leaking or Failing Septic Systems: Older homes outside the urban area of Euharlee and Cartersville are most likely on septic systems. No signs of leaking or failing systems were seen in the field survey. Stakeholders, Bartow Environmental Health concurred that leaking or failing septic systems could be a source of fecal contamination. There is no requirement for maintaining systems or reporting leaks. Environmental Health can investigate a complaint; otherwise leaking or failing tanks are reported on a voluntary basis. In Bartow County, of a total of 22,361 total septic systems recorded, 8,747 systems were installed and 638 were repaired between 1990 and 2000 (EPD, 2004). Septic system installation is regulated through permits and inspections of on-site sewage management systems; plumbers and other maintenance operators are required to submit monthly logs of pump-outs and maintenance done to systems. Lot size and configuration were listed as problematic in installation and maintenance. Septic system maintenance was identified as a key area for education and outreach.

Field Notes

Connessena Creek Listed for Bio/sediment Field Survey

Survey Team: Nancy Gribble

Date: June 21, 2005

Weather Conditions: Sunny, humid, ~ 80 degrees F.

Stop # 1: Old Rome Road, bridge

Water appearance was clear to muddy, some flow downstream, flow upstream steady, good tree buffer drains pasture and forests.

Houses along road, new land disturbing beyond bridge to the east.

Photograph taken: 8. 0315010415 Connessena Creek: Old Rome Rd., water appearance clear to muddy, may be associated with land disturbing beyond bridge to east of this location.

Stop # 2: Connessena Road

Water appearance was clear, tree buffer along creek for miles, upstream area looks mowed along the creek for 25 feet. Silt fencing along road north and south of the creek in the roadside ditch. Used as a local swimming hole, with swinging role in a near tree.

Two Run Creek Field Survey 1 of 2

Survey Team: Nancy Gribble

Date: June 21, 2005

Weather Conditions: Partly Cloudy, just after early morning rain, ~74 degrees F.

Stop # 1: Reynolds Bridge Road

Clear on upstream, cloudy on downstream, tree buffer on upstream side, pasture (hay growing) to all side. Near the bridge, the stream is used for swimming and picnic area set up.

Photograph taken: 7. 0315010415 Two Run Creek: Reynolds Bridge Rd- Stream bank accessible to wildlife.

Stop #2: Hardin Bridge Road, bridge crossing

Stream had a muddy appearance near bridge, but clearer further up stream. Good tree buffer, drains pasture lands. Silt fence near creek.

Stop#3: Highway 293 bridge

Clear appearance upstream, some whitewater ripples over rocks, downstream mostly pools, tree buffer on both sides, drains runoff from pastures in the area. Banks used for fishing. Railroads to south side, drains runoff to the creek.

*Could see the creek along the road for 1-2 miles, muddy appearance, tree buffer good.

Photographs taken: 4. 0315010415 Two Run Creek: Hwy 293 Bridge- Creek drains pasture seen in background.

Two Run Creek Field Survey 2 of 2

Survey Team: Nancy Gribble

Date: July 28, 2005

Weather Conditions: Dry, sunny, ~80 degrees F.

Stop #1: Browns Loop—South

Stream appearance was milky, muddy upstream, to clear in pools of downstream. Seen at the wooden bridge, good tree buffer pastures to the north, some with horses grazing.

Stop #2: Gaines Road

Water was clear to milky in pools upstream, fencing and PVC pipe seen. Cattle in near pastures grazing. Creek had good thick tree buffer. The SRM Aggregates Quarry was located at the beginning of Gaines Road.

Stop # 3: Browns Loop- South

Stream appearance was murky in upstream pools, good rock bed, wider upstream; on the downstream side the Bartow County Two Run Creek WPCP outfall goes into the creek. The water appearance was clear, good flow. Nothing was discharging from the outfall during the survey.

Cattle were grazing in the upstream pasture and it appears that the cattle can get into the creek from the pasture.

Wildlife seen: Large Blue Heron at outfall

Photographs taken: 1. 0315010415 Two Run Creek: Browns Loop-South: Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge; 0315010415 Two Run Creek: Browns Loop-South: Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge 2 of 2; 3. 0315010415 Two Run Creek: Browns Loop-South: Cattle grazing in pastures along stream, have stream access; 5. 0315010415 Two Run Creek: Browns Loop- South- Stream bank accessible to wildlife, cattle fenced out of stream; and 6. 0315010415 Two Run Creek: Browns Loop South: Stream bank accessible to wildlife.

Etowah River, Euharlee Creek to US Highway 411, Field Survey

Survey Team: Nancy Gribble

Date: June 17, 2005

Weather Conditions: Sunny, slight breeze, ~85 degrees F.

Stop #1: Hardin's Bridge Road (1930 iron/wood bridge)

The river had a clear to greenish appearance, good flow, and good tree buffer to creek banks. Farms are along the road with pasture for cattle grazing, corn row cropping, hay fields being cut, cattle in pasture to north side of the river.

Birds seen in area, wildlife can access the river along the banks.

Stop #2: Jones Slough Road, new log home beside river

The river was clear to green appearance, river down in level according to landscape worker in the area. The road had several new homes built, along with fenced pasture land. Birds and wildlife can access the river along the banks.

Photograph taken: 10. 0315010415 Etowah River, Euharlee Creek to US Highway 411: Hwy 411 Bridge crossing- River bank accessible to wildlife.

Stop #3: Highway 411 Bridge crossing, southbound side. The upstream side had good flow, clear to green appearance. The area is farm land, with soybean row cropping, forest on both sides of the river downstream. Birds and wildlife can access the river along the banks.

Stop #4. Etowah River seen in City of Euharlee downtown, on June 15, 2005 survey of the Etowah River #13.

Photograph taken: 9. 0315010415 Etowah River, Euharlee Creek to US Highway 411: Euharlee Road- River bank accessible to wildlife.

To the extent possible, identify sources and quantify the extent of pollution in the stream segment for each of the parameters listed in Table 2 and evaluate the likely impact on the parameter load to the stream. This should follow research performed and described in preceding narrative and should correct or add information to the TMDLs. **The SOURCES SHOULD BE RANKED** from those having the most impact to those having the least impact. The estimated extent of contribution can be expressed as the area of the watershed affected, the stream miles affected, or the number of activities contributing to the problem. The magnitude of contribution should be estimated to be large, moderate, small, or negligible.

**Table 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT
Connesenna Creek (Etowah River Tributary) (EPA)**

PARAMETER	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Biota/ Sediment	Land disturbing activities	Throughout	High	Some road construction may have caused erosion on Old Rome Road

Etowah River (Euharlee Creek to US Hwy 411)

PARAMETER	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform Bacteria	Wildlife sources	Throughout	Moderate	The area is inhabited by large numbers of wildlife (deer, turkeys, geese, ducks, beaver, and raccoons).
Fecal Coliform Bacteria	Agricultural livestock runoff	Throughout	Moderate	
Fecal Coliform Bacteria	Possible leaking or failing septic systems	Throughout	Small to moderate	Older homes outside the urban area of Euharlee are most likely on septic systems.

Two Run Creek

PARAMETER	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform Bacteria	Agricultural Livestock runoff	Throughout	Moderate	Several cattle farms were seen throughout the stream segment. Pastureland drains almost entire segment.
Fecal Coliform Bacteria	Wildlife Sources	Throughout	Moderate	Wildlife is abundant in the area
Fecal Coliform Bacteria	Possible Leaking septic systems	Throughout	Small to moderate	

V. STAKEHOLDERS

PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities which may be employed to reduce the impacts of the causes of impairment.

Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

List the watershed or advisory committee members of the stakeholder group for this segment in the following table.

Table 4. COMMITTEE MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Steve Bradley County Administrator	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5030	Bradleys@bartowga.org
Lamont Kiser Bartow County Engineer	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5067	kiserl@bartowga.org
Tammy Decker USDA Rural Development	12 Felton Place	Cartersville	GA	30120	(770) 386-3393	Tammy.decker@ga.usda.gov
Sherri Henshaw Coordinator, Keep Bartow Beautiful	P.O. Box 786	Cartersville	GA	30120	(770) 387-5167 Fax: 770.606.2382	henshaws@bartowga.org
Bobby Gay Zoning and Code Enforcement officer	30 Burge's Mill Road	Euharlee	GA	30145	(770) 386-1542 ext 210	code@euharlee.com
Edmund L. Mullinax, City of Cartersville	P.O. Box 1390	Cartersville	GA	30120	(770) 607-6296	emullinax@cityofcartersville.org
Lake Allatoona Preservation Society (contact Edmund L. Mullinax)	P.O. Box 1390	Cartersville	GA	30120	(770) 607-6296	emullinax@cityofcartersville.org
Gene Camp Bartow County Water System	P.O. Box 850	Cartersville	GA	30120	(770) 387-5170	campg@bartowga.org
Kenneth M. Akins Etowah Indian Mounds Site Manager	813 Etowah Indian Mound Road, S.E.	Cartersville	GA	30120	(770) 387-3747	Etowah_mounds@dnr.state.ga.us
Jim Stafford City of Cartersville Water Department	P.O. Box 1390	Cartersville	GA	30120	(770) 387-5653	jstafford@cityofcartersville.org
Kathy Floyd County Extension Agent	320 W. Cherokee Ave. Room 112	Cartersville	GA	30120	(770) 387- 5142	Kpfloyd@uga.edu

Katie Knowles USACE Allatoona Dam Natural Resources Spec.	P.O. Box 487	Cartersville	GA	30120	(678) 721-6738	Kathrine.m.Knowles@sam.usace.army.mil
Jim Shinall USACE Allatoona Dam Environmental Compliance Coordinator	P.O. Box 487	Cartersville	GA	30120	(678) 721-6716	James.t.shinall@sam.usace.army.mil
Michelle Simmons, USDA Natural Resource Conservation Service	717 South Wall Street, Suite 1	Calhoun	GA	30701	(706) 629-2582 X 3	Machelle.simmons@ga.usda.gov
Pam Robinson, Environmental Health Dir.	P.O. Box 665	Cartersville	GA	30120	(770) 387-2614	pjrobinson@dhr.state.ga.us
Keith Gilmer Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	K_gilmer@gaswcc.org
John Loughridge Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	J_loughridge@gaswcc.org
Curt Gervich Etowah Habitat Conservation Program	P.O. Box 287	Acworth	GA	30503	(678) 801-4013	curt@etowahhcop.org
Joe Cook, Executive Director, or Katie Owens, Program Coordinator, Coosa River Basin Initiative	408 Broad St.	Rome	GA	30161	(706) 767-0497	crbi@coosa.org kedy@coosa.org
Cindy Haygood Rolling Hills Regional Conservation and Development Council	P.O. Box 1550	Dallas	GA	30132	(770) 505-4288	Cindy.Haygood@ga.usda.gov

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

VI. MANAGEMENT MEASURES AND ACTIVITIES

Describe any management measures or activities that have been put into place or will be put into place including regulatory or voluntary actions or other controls by governments or individuals that specifically apply to the pollutant that will help achieve water quality standards. Include who will be responsible for the measure, how it will be funded, the status, the date it will be or was initiated, and a short description of how effective the measure is or will be.

Table 5. MANAGEMENT MEASURES AND ACTIVITIES

GENERAL MEASURES APPLICABLE TO ALL PARAMETERS

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
Federal Clean Water Act, Section 305(b) and 303 (d) Amended 1977	USEPA, Georgia DNR EPD, Bartow County,	The congressional objective of the Clean Water Act "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 305 (the <i>National Water Quality Inventory</i>) requires states to report progress in restoring impaired waters to EPA on a Biennial basis. Section 303(d) requires states to identify 'impaired' waters, submit a list to EPA every two years, and develop TMDLs for these waters	Federal, Georgia	Enforced	1972; amended 1977	
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6	Law prohibiting discharge of excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats. Law authorizing Georgia EPD to control water pollution, eliminate phosphate detergents, and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit situation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins.	Federal, Georgia, Bartow County,	Enforced	11/1964	
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government.	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply, watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted form	State			

		permitting requirements provided the activity complies with BMPs.				
Georgia Planning Act. Part V Environmental planning measures. GA DNR EPD Rules for Environmental Planning Criteria (Ch. 391-3-16)	Bartow County, City of Cartersville	Wetland protection, river corridor protection, etc. Minimum criteria. Requires 100' buffer on protected rivers. Water supply watershed protection also requires 100' stream buffers.	General Fund	Enforced	1989	
Georgia Erosion and Sedimentation Control Act, Construction Permit, 2003 Amendment	Bartow County, City of Cartersville, Georgia DNR/ EPD, Georgia Soil and Water Conservation Commission	Municipalities certified as Local Issuing Authority for land-disturbing activities. Requires Erosion and Sedimentation Control Plan incorporating best management practices plus "Qualified Personnel" Training and Certification Program adopted from Georgia Soil and Water Conservation Commission. Certification of on-site "Qualified Personnel" to ensure proper design, construction, and maintenance of standard E & S control measures and storm water management practices.	Bartow County, City of Cartersville	Enforced	2003	
Georgia Erosion and Sedimentation Control Act (OCGA 12-71-1)	Bartow County, Georgia DNR/ EPD, Georgia Soil and Water Conservation Commission	Restricts activity within 50 feet of streams that support or could support trout, and 25 feet of all other streams and lakes. This includes intermittent streams, which do not run year-round, as well as perennial streams	Bartow County, Georgia DNR/ EPD	Enforced	2003; EPD rule revised 1/2005	
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, Bartow County	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply, watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted from permitting requirements provided the activity complies with BMPs.	State			
Erosion and Sedimentation Control Training and Certification	Georgia Soil and Water Conservation Commission, GA EPD, Rolling Hills RC&D, Bartow County	House Bill 285 requires state certification in Erosion and Sedimentation Control for anyone involved in the following activities: land development, design, review, permitting, construction, monitoring, inspection, or any land-disturbing activity in Georgia (Georgia Soil and Water Conservation Commission, 2005). The GSWCC also has updated requirements for E&SC plans to be submitted with each project. Three levels of certification are offered through the Rolling Hills Regional Conservation and Development Council (RC & D) and Chattahoochee Technical College. Bartow has held class also, level 1A.	Georgia Soil and Water Conservation Commission, GA EPD, Bartow County	Enforced	Certification by end of 2006; One class held in Bartow County 12/05	Very
Etowah Habitat Conservation Plan	US Fish and Wildlife Service, Bartow	SOP includes six elements: 1. Two required preconstruction meetings- one, an early meeting with the	Bartow County, City of	In review		

Standard Operating Procedure (SOP) for Erosion and Sedimentation Control	County	site planner and relevant E&S professionals to identify problem areas before site plans are Finalized, and two, a subsequent meeting with the utilities, engineers, developer, E&S installation crew, and owner to review where and how E&S control measures will be installed; 2. Semi-monthly reporting requirements; 3. A bonding program; 4. A minimum inspection frequency requirement; 5. A brief E&S checklist for building inspectors; and 6. Designation of emergency on-call E&S personnel from each development. Requires updates to ordinances in participating jurisdictions.	Cartersville			
Construction Storm Water Discharge NPDES Permit	Georgia DNR/ EPD	General storm water permit for stand-alone construction sites; infrastructure permits; and common developments. Requires implementation of Erosion, Sedimentation and Pollution Control Plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards.	State	Enforced		
Industrial Storm Water Discharge NPDES Permit	Georgia DNR/ EPD	General storm water discharge permit for manufacturing facilities; mining, oil, and gas operations; hazardous waste treatment; storage or disposal facilities; recycling centers; steam electric power generating facilities; transportation facilities; domestic sewage or sewage treatment. Requires implementation of Storm Water Pollution Prevention Program. May require storm water monitoring program targeting discharges into/near 303 (d) listed waters.	State	Enforced		
Notice of Intent coverage of small MS4 under NPDES Phase II general permit	Bartow County	NOI approved by EPD in 2005. Includes Best Management Practices to reduce non-point source pollution in the county. NOI approved in 2005.	Bartow County	Enforced	2005	Very
Phase II NPDES Storm Water Permit for Small MS4	Georgia DNR & EPD, Bartow County	Bartow NOI Approved in 2005. Requires local jurisdictions to develop a comprehensive Storm Water Management Program (SWMP) to include 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Storm Water Runoff Control; 5. Post-Construction Storm Water Management in New Development and Redevelopment; 6. Pollution Prevention and Good Housekeeping related to municipal operations, reporting, and monitoring and program implementation. Bartow County is in process of implementing these best management practices.	Bartow County	Enforced	2005	
Watershed Assessment and Protection Plan for Phase II NPDES	Bartow County	Required for new or expanding wastewater treatment discharge permits. Internal assessment of storm water pollution prevention plan (map of facilities and responsibilities for upkeep): Reference TMDL	Bartow County	Enforced	2005	

Permitting		implementation plans (TMDLIP) and water quality strategies for non-point source pollution elimination. Drives local land use planning. Georgia EPD guidelines include Management Measures Specific for 303(d) listed stream segments in the impacted watershed. WPP to reference TMDLIP already developed. Where no TMDLIP developed, WPP to outline management/ monitoring measures targeting listing violations; identify authority responsible for implementing the above management/ monitoring measures; indicate possible funding sources; establish current status and/or date measures will be initiated, and expected effectiveness; and design educational and outreach activities for intended audiences.				
Sanitary Sewer Maintenance Program	Bartow County	Sanitary Sewer system inventory and inspection (mapping, television inspections); infiltration and inflow identification and reduction (flow monitoring, smoke testing); sewer line rehabilitation (pipe bursting, relining, cleaning) and manhole rehabilitation.	Bartow County	Enforced	Ongoing	
District-wide Watershed Management Plan	Georgia DNR/EPD, Metropolitan North Georgia Water Planning District (SB 130), Bartow County, Cartersville	Bartow has adopted five of six Model Storm Water Management Ordinances that address Post Development Storm Water Management for New Development and Redevelopment, Conservation Subdivision/ Open Space Development, Illicit Discharge and Illegal Connection, Litter Control, and Stream Buffer Protection as required by Georgia EPD in MS4 Phase II Permit Renewals. The District Plan also addresses municipal good housekeeping practices to control non-point source pollution; improved enforcement of erosion and sedimentation control; storm water management for transportation projects; and education and public awareness activities.	Bartow County, Cartersville	Enforced	Bartow, 12/2005	
Watershed Protection Tools Addressing Poor Riparian Buffers	Bartow County and stakeholders	Riparian Buffer Ordinance (Stream Buffer Protection Ordinance of 50'); Stream Restoration; Stream Mitigation Bank; Conservation Subdivision Ordinance	Bartow County	Enforced	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	Very if enforced
Watershed Protection Tools Addressing Point Sources	Bartow County and stakeholders	Improved NPDES permits; Enforcement of existing permits	Bartow County	Enforced	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	Very if enforced
Watershed	Bartow County and	Relevant Storm water Management and Conservation	Bartow County	Enforced	Compliant	Very if enforced

Protection Tools Addressing Impervious Surfaces and Storm Water Runoff	stakeholders	Subdivision Ordinances; Conservation Planning			with or exceeds Metro N. GA District model ord. 12/07/05	
County Municipal Ordinance	Bartow County/ Code Enforcement Office	Post-Development Stormwater Management Ordinance with stream buffer limits; Litter Control Ordinance; Conservation Subdivision ordinance; Riparian Buffer ordinance; Greenspace Ordinance	General fund	On-going	January 2005	Very
Federal Endangered Species Act of 1973	Department of the Interior, US Fish and Wildlife Service	Provides a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve those purposes	USFWS	Enforced	1973	Very if enforced
Etowah Habitat Conservation Plan Stormwater Ordinance with Better Site Design Guidelines and Addendum: Runoff Limits, Priority Area Protection and Maintenance of Stormwater Facilities	US Fish and Wildlife Service, Bartow County	Additions to Metropolitan North Georgia Water Planning District Model Storm Water Management Ordinance addressing impervious surface runoff including 1. Clarification of bond and fee requirements; 2. Strengthening maintenance and inspection requirements, 3. Encouraging the use of Better Site Design credits, with additional performance standards for high priority habitat areas including section five, Model Runoff Limits Ordinance. This establishes requirements for runoff infiltration system installation and maintenance. Development of Runoff Limits Manual in progress (2006) Engineering Specifications for Structural BMPs. Requires updates to ordinances in participating jurisdictions.	Bartow County	Enforced	Compliant with or exceeds Metro N. GA District SW ord. 12/07/05	
Etowah Habitat Conservation Plan Stream Buffer Ordinance	US Fish and Wildlife Service, Bartow County	For those jurisdictions in the Metropolitan North Georgia Water Planning District, Additions are made to the district's Model Stream Buffer Ordinance addressing granting of variances. Requires updates to ordinances in participating jurisdictions.	Bartow County	Proposed	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	
Etowah Habitat Conservation Plan Subdivision Ordinance	US Fish and Wildlife Service, Bartow County	For those jurisdictions in the Metropolitan North Georgia Water Planning District, changes made to the district's Model Conservation Subdivision Ordinance include requirement of site map analysis for all developments with open space plans, instruments of permanent protection, and a four-step design process specified; and changes to primary conservation sites to be included in open space requirements including 100-year floodplain, 75-foot stream buffers, 25%-or-greater slopes, wetlands,	Bartow County		Compliant with or exceeds Metro N. GA District model ord. 12/07/05	

		endangered species habitats, and archeological sites. Requires updates to ordinances in participating jurisdictions. Places emphasis on protecting stream buffers and significant hydrological features..				
Etowah Habitat Conservation Plan Conservation Road Crossing and Culvert Design Guidelines	US Fish and Wildlife Service, Bartow County	Road Crossings Technical Committee is in the process of developing design guidelines for road crossings of stream and stream culverts to alleviate habitat concerns that pipe culverts limit fish movement in stream	Bartow County		In committee	
Etowah Habitat Conservation Plan Conservation Utility Line Crossing and Construction Recommendations	US Fish and Wildlife Service, Bartow County	Utility Crossings Technical Committee is in the process of developing design guidelines for utility stream crossings to reduce sedimentation and other habitat concerns resulting from erosion of land disturbed by utility activities	Bartow County		In committee	
Storm drain stenciling requirement	Bartow County	County ordinance requiring stenciling of storm drains by developers for new housing developments.		Enforced	2004	
Storm drain stenciling	Keep Bartow Beautiful	Volunteers stencil storm water drains in older residential developments		Voluntary	2004	
EPA Section 319 Non-point Source Implementation Grants	Georgia Department of Agriculture/ Georgia Environmental Protection Division for enforcement action	Funds distributed through a competitive process to public agencies, regional development centers, state colleges and universities, and state agencies.	Federal, State		Yearly	Varies with BMP or project
Georgia Best Management Practices	Georgia DNR/EPD	Informs those involved in the agriculture business of effective practices to minimize non-point sources of pollution	Georgia			Varies with BMP
Georgia's Best Management Practices	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	GFC program to inform landowners, foresters, timber buyers, loggers site preparation and reforestation contractors and others involved with silvicultural operations about commonsense, economical effective practices to minimize nonpoint source and thermal pollution. GFC encourages and monitors compliance and conducts a complaint resolution program.				>75% when properly applied to site preparation and harvesting activities.
Georgia Forestry Commission Monthly BMP Assurance Examination	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	In an effort to document "reasonable assurance" that water quality will be proactively protected during regular ongoing silvicultural operations, the GCF will offer a monthly BMP assurance examination of active sites. All active of ongoing sites will be identified either through monthly air patrol flights, courthouse records, riding the roads, notification or by landowners. Sites located within watersheds of specific biota (sediment) impaired streams will be given a higher priority to identify and conduct	Federal and State			

		examinations.				
Memo to the Field: Application of BMPs to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast (Silviculture)	EPA/ US Army Corps of Engineers - (cases normally referred to GFC to make initial determination)	Identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.	State			
Federal Farm Bill (Swampbuster, Ag)	US Department of Agriculture Natural Resource Conservation Service	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture	Federal			
Partners for Fish and Wildlife	US Fish and Wildlife Services	This is a proactive, voluntary program that works with private landowners to restore fish and wildlife habitats on their land. The projects have several different focuses, but for the purpose of water quality the projects focus on stream and riparian restoration and restoration of rare species habitat.	Federal variable cost share			Effectiveness will vary with the specific application and must be individually determined.
Farm Bill 2002	United States Department of Agriculture / National Resources Conservation Services	Enhances long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality.	Federal Cost-Share and Incentive Programs.			Effectiveness will vary with the specific application and must be individually determined.
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Services	Voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health.	Federal 50% cost share with possible additional incentive payments			Effectiveness will vary with the specific application and must be individually determined.
Special Forestry/Wildlife Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Services	Special funds allocated out of the EQIP program that will address forest road erosion/water quality, plant health, and wildlife habitat. This program has a separate ranking for rewarding money from the regular EQIP program.	Federal 50% cost share with possible additional incentive payments			Effectiveness will vary with the specific application and must be individually determined.
Wildlife Habitat Incentives Program (WHIP)	Natural Resources Conservation Services	Provides technical and cost share assistance for the creation of high quality wildlife habitat. Habitats of special concern include riparian areas and endangered and threatened species habitat.	Federal 75% of cost of the installation of practice provided			Effectiveness will vary with the specific application and must be individually determined.

Wetlands Reserve Program (WRP)	Natural Resources Conservation Services	Provides technical and financial assistance to landowners to enhance degraded wetlands degraded by farming or draining. There are three options with WRP to receive funds that have differing time agreements and easements resulting in different cost share. In all programs participants control access to the land, may lease or use land for hunting, fishing, and other passive recreational activities. Compatible uses are allowed as long as the do not degrade the wetland.	Federal (Farm Bill 2002) Cost Share 1. Permanent Easement :Pays appraised value of land (\$2,000/ acre cap) and 100% of costs of restoration. 2. 30-Year Easement: Pays 75% of appraised value of land and 75% of restoration costs. 3. Restoration Cost Share Agreement: Pays 75% of restoration costs, no easement on the property.			Effectiveness will vary with the specific application and must be individually determined.
Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division	Georgia Department of Agriculture	This requires that persons engaged in removing animal manure from livestock/poultry production areas, transporting animal manure on public roadways, or depositing animal manure to a premise other than its point of origin obtain a permit and follow rules to control animal disease, and outlines regulations for transportation, equipment and storage.	State			Effectiveness will vary with the specific application and must be individually determined.
Farm Bill 2002 Forestland Enhancement Program	Georgia Forestry Commission	The Forestry Commission has implemented best management practices on its lands to reduce sedimentation and erosion from silviculture practices. The Georgia Forestry Commission also provides education, technical and financial assistance through cost-share programs to private landowners especially in the Forestland Enhancement Program, a part of the 2002 Farm Bill.	Federal, State		Ongoing	Very
Federal Farm Bill 2002	United States Department of Agriculture/ Natural Resources Conservation Service	Enhances long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality.	Federal Cost-Share and Incentive Programs		2002	Varies with BMP applied.
Federal Farm Bill (Swampbuster Ag)	United States Department of Agriculture / National	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture.	Federal			

	Resources Conservation Services					
Conservation Reserve Program (CRP)	Natural Resources Conservation Services / USDA Farm Services Agency	Provides technical assistance, rental payments and cost share funding to address specific natural resource concerns including: protection of ground and surface waters, soil erosion and wildlife habitat. Eligible practices include tree planting, grassed waterways, wildlife habitat buffers, and shallow water area for wildlife and filter strips.	Federal, State, landowner	Cost-share	Ongoing	Varies
Continuous Conservation Reserve Program (CCRP)	Natural Resources Conservation Service	Conservation cost-share for best management practices such as fencing livestock out of streams; provides up to a 90-10% cost-share	Federal Annual rental payment for land taken out of production and 50% cost share for practice installation.	Cost-share	Ongoing	Varies with BMP applied.
Conservation of Private Grazing Land Program	United States Department of Agriculture / National Resources Conservation Services	This technical assistance will offer opportunities for: better grazing land management; projects for improving water quality include: protecting soil from erosive wind and water; conserving water; providing habitat for wildlife; sustaining forage and grazing plants.	Federal (Farm Bill 2002) This is not a Cost-Share Program.			Varies with BMP applied.
Conservation Security Program (CSP)	Natural Resources Conservation Services	This is the first program that rewards farmers and ranchers for high levels of environmental stewardship. Producers on cropland, orchards, vineyards, pasture and range may apply for CSP regardless of size, type of operation, or crops produced. Land in other cost share programs is not eligible. CSP will first be offered in watersheds with greatest potential for improving water quality, soil quality and grazing land condition. In 2005, the four watersheds of focus will be the Ichawaynochaway, Kinchagoonee-Muckalee, Middle Flint, and Upper Ochlockonee. An enhancement example is to install a riparian buffer,	Federal (Farm Bill 2002) Cost Share There is three tiers of involvement, which result in different expectations and cost share opportunities.			Effectiveness will vary with the specific application and must be individually determined.
Georgia Best Management Practices	Georgia Department of Agriculture / Georgia EPD for enforcement action.	Inform those involved in the agricultural business of effective practices to minimize nonpoint source pollution.	State			Varies with BMP applied.
Section 319(h) Nonpoint Source Implementation Grant	Georgia Environmental Protection Division	Funds distributed through a competitive process to public agencies, regional development centers, State colleges and universities, and State agencies. Eligible projects include TMDL or Watershed Management Plan Implementation, BMP Demonstrations, and Information and Education.	Federal and State Cost Share Program. Recipient must provide 40% match.			Effectiveness will vary with the specific application and must be individually determined.
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Services	Voluntary Program that provides technical and cost-share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and	Federal (Farm Bill 2002) 50% Cost share with			

		plant health	possible additional payments			
Pollution Prevention Litter Removal	Bartow County Solid Waste Director	Remove litter from County roads and properties using labor from State correctional facilities	General Fund	Ongoing	January 2004	Very
Pollution Prevention Good Housekeeping for Municipal Operations	Bartow County	Insure all County facilities submit an NOI for industrial discharges; Assist each facility with development of a Storm Water Pollution Prevention Plan (SWPP); Educate and inspect those facilities	General Fund	Ongoing	December 2004	Very
Volunteer clean up activities	Sherri Henshaw Coordinator, Keep Bartow Beautiful	Volunteers for stream cleanup on River Cleanup Day. Trash cleanup on the Etowah River for this segment at Riverside Park	General Fund		October 31, 2005	Very
Education and river clean up	DNR, Ken Akins Site Manager Etowah Indian Mounds	Education on historical water quality, river uses, clean-up of Etowah River as part of tour of Etowah Indian Mounds	State	Yearly		Very
Stormwater Best Management Practices	Bartow County	Continue to implement recommended Best Management Practices to address Biota (Sediment)/ Habitat and other pollutants as detailed in Bartow County's NOI Phase II MS4 Stormwater Management Plan to include 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Storm Water Runoff Control; 5. Post-Construction Storm Water Management in New Development and Redevelopment; 6. Pollution Prevention and Good Housekeeping related to municipal operations, reporting, monitoring and program implementation	General Fund	Recommended 2006		May vary
District-wide Septic System Maintenance	Bartow County Environmental Health, Northwest Georgia Health District	Expand ongoing education and outreach to promote proper maintenance of private septic systems using DVD program	Homeowners with existing septic systems	Recommended 2006		
Adopt-A-Stream	In conjunction with Coosa River Basin Initiative (CRBI)	Water quality chemical and biological volunteer training and monitoring, stream clean-up, stream bank and habitat restoration, and visual stream surveys	Volunteer	Ongoing		Moderate- Cannot test for fecal coliform

MEASURES APPLICABLE TO FECAL COLIFORM

PARA-METER 1	MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/IMPLE-MENTED	EFFECT-IVENESS (Very, Moderate, Weak)
FC	Rules and regulations for onsite wastewater management (Septic system permitting)	Bartow County Department of Public Health	Regulates through permits and inspections of on-site sewage management systems; requires plumbers and other maintenance operators to submit monthly logs of pump-outs and maintenance done to systems	Bartow County	Enforced	Ongoing	
FC	Sanitary Sewer Maintenance Program	Bartow County	Sanitary Sewer system inventory and inspection (mapping, television inspections); infiltration and inflow identification and reduction (flow monitoring, smoke testing); sewer line rehabilitation (pipe bursting, relining, cleaning) and manhole rehabilitation.	General Fund	Enforced	Ongoing	Moderate
FC	Pollution Prevention Litter Removal	Bartow County Solid Waste Director	Remove litter from County roads and properties using labor from State correctional facilities	General Fund	Ongoing	January 2004	Very
FC	Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division	Georgia Department of Agriculture	This requires that persons engaged in removing animal manure from livestock/poultry production areas, transporting animal manure on public roadways, or depositing animal manure to a premise other than its point of origin obtain a permit and follow rules to control animal disease, and outlines regulations for transportation, equipment and storage.	State			Effectivene ss will vary with the specific application and must be individually determined .
FC	District-wide Septic System Maintenance	Bartow County Environmental Health, Northwest Georgia Health District	Expand ongoing education and outreach to promote proper maintenance of private septic systems using DVD program	Homeowners with existing septic systems	Recommended 2006		

MEASURES APPLICABLE TO BIOTA (SEDIMENT)

PARA-METER 2	MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/IMPLEMENT-ED	EFFECTIVENESS (Very, Moderate, Weak)
Biota (Sediment)	Get the Dirt Out	Coosa River Basin Initiative (CRBI), New Echota River Alliance	Volunteer training program for construction site inspection, identification of failure to use BMPs in construction activities	Donations, grants from foundations, and membership	Ongoing	2005	Moderate
Biota (Sediment)	Adopt-A-Stream, in conjunction with CRBI	Coosa River Basin Initiative	Water quality chemical and biological volunteer training and monitoring, stream clean-up, stream bank and habitat restoration, and visual stream surveys	CRBI is funded by donations, grants from foundations, and membership	Ongoing		Moderate
Biota (Sediment)	Stream Buffer Installation and Maintenance Incentives	Bartow County	Explore incentives for developers (such as density variances) who meet or exceed stream buffer requirements in developments who agree to maintain buffers for specified period; similar incentives for homeowners		Recommended 2006		May vary

VII. MONITORING PLAN

The purposes of monitoring are to obtain more data, to determine the sources of pollution, to describe baseline conditions, and to evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for delisting purposes.

Table 6. MONITORING PLAN

PARAMETER (S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
Fecal Coliform	EPD, USGS	Current	Every 5 years		Ongoing monitoring for listing, delisting of impaired streams
Fecal Coliform	City of Cartersville	Current	July 2005	July 2006	Monitoring discharge for FC bacteria as result of reported overflow from Cartersville Biosolids WPCP
Fecal Coliform	Bartow County	Current	Ongoing		Inclusion of TMDL impairments in Bartow County's Long-Term Monitoring Plan
Flow and Temperature; Continuous Water Quality Monitoring; Water Quality Sampling (BOD, DO, Temp, TKN, NH ₃ , NO ₂ - NO ₃ , total P, ortho- phosphate, TOC, conductivity, and Ph); Chlorophyll A	EPD, USGS	Current	2005-2006		Coosa River Basin Modeling study- Etowah River at Confluence of Two Run Creek
Flow and Temperature; and Water Quality Sampling (BOD, DO, Temp, TKN, NH ₃ , NO ₂ - NO ₃ , total P, ortho- phosphate, TOC, conductivity, and Ph).					Coosa River Basin Modeling study: Two Run Creek

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities which will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
Sherri Henshaw Coordinator, Keep Bartow Beautiful	Volunteers for stream cleanup on River Cleanup Day. Trash cleanup on the Etowah River for this segment at Riverside Park	Volunteers, teenagers from local schools, Keep Bartow Beautiful, Bartow 4-H Club, Mountain District EPD office, Lake Allatoona Corps of Engineers	October 31, 2005
Provide septic system maintenance outreach to Bartow County residents	Bartow County Septic System Outreach Subcommittee	Proposed 1/31/06	
Ken Akins Site Manager Etowah Indian Mounds	Education on historical water quality, river uses, clean-up of Etowah River as part of tour of Etowah Indian Mounds	Approximately 17,000 students per year from area schools	Ongoing, mostly in fall and spring school terms
Bartow Co. Director of Planning and Zoning	Comprehensive stormwater awareness training program	Bartow County Homeowner's Association	Ongoing since July 2004
Sherri Henshaw Coordinator, Keep Bartow Beautiful	Teacher Training for Waste In Place, Project WET (Water Education for Teachers "to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources," Enviroscope (illustrates non-point source pollution in the classroom using tabletop model)	Teachers, students in grades K-12	Ongoing
Sherri Henshaw Coordinator, Keep Bartow Beautiful	Stormwater-related presentation materials provided to schools	Elementary and Middle schools	Yearly since October 2004
Sherri Henshaw Coordinator, Keep Bartow Beautiful	Develop a speakers' bureau to provide outreach on storm water issues	Local civic groups	Ongoing since July 2004
Bartow County Staff	Develop mechanism to improve "interjurisdictional cooperation on TMDL and Watershed Improvement issues"	City of Cartersville, Paulding County, and Polk County	Proposed
Kathy Floyd Bartow County Extension Agent	Articles on water quality written for local newspaper, ongoing outreach on water quality issues	Bartow 4-H Club, citizens	Ongoing
Rolling Hills Resource Conservation and Development Council	Envirothon, a yearly district and state competition for high school students testing skills and knowledge of aquatics including water quality, and other environmental topics	High School Students	March 2006
Adopt-A-Stream, in conjunction with Coosa River Basin Initiative (CRBI)	Water quality chemical and biological volunteer training and monitoring, stream clean-up, stream bank and habitat restoration, and visual stream surveys	Individuals, families, school groups, civic clubs, and businesses	Ongoing
Bartow County Board of Tax Assessors	Implement tax relief program for property owners who place conservation easements on all or part of properties, especially for greenspace on Timber lands	Property owners especially those with large timber holdings	Proposed
Bartow Co. Director of Planning and Zoning	Comprehensive stormwater awareness training program	Bartow County Homeowner's Association	Ongoing since July 2004
Janice Granai	Demonstration rain garden at Red Top Mountain State Park	Homeowners, Community	Ongoing

Park Naturalist, Red Top Mountain State Park	with signage.		
Pam Robinson Bartow County Environmental Health	Septic system outreach and education to homeowners using DVDs- has become statewide model for such education	Homeowners	2004
Director of Engineering, Bartow County	Mapping of stormwater drainage outfall areas through out the county. 100% of the county will be mapped in 2006	EPD compliance, MS4 Permit	2006
CRBI	The Coosa River Basin Initiative conducts non-point source pollution education programs for elementary school students in Floyd County through a grant from Temple-Inland. As well, Get the Dirt Out is another project which provides volunteer training for construction site inspection and identification of failure to use BMPs in construction activities. The project was implemented in March 2005 and covers the Northwest Georgia area of the Coosa River Basin.	Elementary school students	Ongoing
Bartow County	Stormwater Management Education and Outreach	General Public	2006
Bartow County	<ul style="list-style-type: none"> Complete Center for Watershed Protection's <u>Codes and Ordinances Worksheet</u> 	General Public	2007-2008
Bartow County	<ul style="list-style-type: none"> Consider Adopting 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u> where applicable 	General Public	Ongoing
Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> Implement education of community using After the Storm non-point source pollution video presentation on public access channels 	General Public	Ongoing
Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> Reconvene Stormwater Working Group to include all counties, municipalities in Coosa Valley RDC area 	All counties, municipalities in Coosa Valley RDC area	2006
Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> Will investigate 319 h non-point source pollution grant possibilities regarding funding for development of stormwater management training for municipal employees 	All counties, municipalities in Coosa Valley RDC area	2006
Local Governments	Riparian Buffer Education and Outreach	General Public	2007-2008
USDA NRCS/FSA, County Extension Service	<ul style="list-style-type: none"> Consider adopting relevant principles as detailed in 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u> Continue education and outreach to local communities through USDA NRCS/FSA, County Extension Service 	General Public, Homeowners	Ongoing

Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> Will investigate 319 h non-point source pollution grant possibilities regarding purchasing and distribution of education materials encouraging homeowners to develop, maintain riparian buffers 	Homeowners	2006
Coosa Valley RDC, stakeholders	Investigate Funding Sources <ul style="list-style-type: none"> Will investigate 319 grant possibilities regarding development of a project to survey schools in Coosa Valley RDC service area to determine interest in and feasibility of water quality education, specifically on causes of non-point source pollution, importance of riparian buffers, and stormwater pollution prevention 	General Public	2006

IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH

This table will be used to **track and report progress of management measures including BMPs and outreach**. Record milestone dates for:

- Accomplishment of management practices or activities - outreach activities
- Installation of BMPs

to attain water quality standards. Comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
Acquire lands along Etowah River for greenspace and riparian buffer preservation in County	Bartow County Greenspace Committee	2000- present		Several land purchases have been acquired along the Etowah and throughout the county; others are under consideration.
Provide septic system maintenance outreach to Bartow County residents	Bartow County Septic System Outreach Subcommittee	Proposed 1/31/06		Will determine best contact and outreach methods. Several possibilities including mass mailing, or developing a student internship
Stormwater education	Bartow County	Proposed 12/05		Through Keep Bartow Beautiful, Stormwater Management, will educate children and homeowners through presentations and website
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Public Education and Outreach <ul style="list-style-type: none"> School System Stormwater Presentations E & S Training Workshop Speaker's Bureau Stormwater Educational Materials Stormwater Web Page Newspaper Articles 	Keep Bartow Beautiful Coord. Bartow County Dir. Engineering Keep Bartow Beautiful Coord. Bartow County Dir. Engineering County Engineer/ IT Director Bartow County Extension Agent	2004 2004 2004 2005 2005 2005	2004-2006 2004 Ongoing 2006 2006 2006	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Public Participation and Involvement <ul style="list-style-type: none"> Storm Drain Stenciling River Clean-up 	Keep Bartow Beautiful Coord. Keep Bartow Beautiful Coord.	2003 2004	2004 2007	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Illicit Discharge Detection and Elimination <ul style="list-style-type: none"> Storm Sewer Map Ordinance/Regulatory Mech. Evaluation Illicit Discharge Detection/Elimination Ordinance Industry Database 	Bartow County Bartow County Bartow County Engineer Bartow County Engineer	2004 2004 2005 2005	2004-2006 2005 2005 2006-2009	

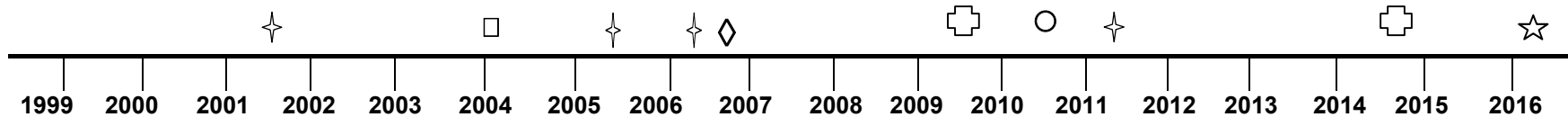
<ul style="list-style-type: none"> • Dry Weather Screening • Source Tracing/Removal Proced. 	Bartow County Engineer Bartow County Engineer	2005 2005	2008 2006	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Construction Site Storm Water Runoff Control <ul style="list-style-type: none"> • Ordinance Evaluation • Litter Control Ordinance • Development Plan Review • Stormwater Quality Site Inspections • Stormwater Quality Violation Plan • Erosion & Sedimentation Certification • Citizen Complaint Hotline 	Bartow County Engineer Bartow County Engineer Bartow County Engineer Bartow County Engineer/Inspection Bartow County Engineer/Inspection Bartow County Engineer Code Enforcement/ County Engineer	2004 2005 2005 2005 2005 2005 2005	2006 2006 2006 2006 2006 2006 2006	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Post-Construction Storm Water Management in New Development and Redevelopment <ul style="list-style-type: none"> • Ordinance Evaluation • Stormwater Management Ordinance • Conservation Subdivision Ordinance • Adoption of Stormwater Design Manual • Countywide Watershed Assessment • BMP Mapping • Stormwater Management Facility Inspection & Maintenance Program • New Stormwater Management Facility Water Quality Assessment 	Bartow County Engineer Bartow County Engineer Bartow County Engineer Bartow County Engineer Director- Water & Sewer County Engineer Road Dept. Director/ County Engineer County Engineer	2004 2005 2005 2003 2005 2005 2005 2005	2005 2005 2005-2006 2003-2006 2006-2010 2005-2006 2005 2005	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Pollution Prevention and Good Housekeeping <ul style="list-style-type: none"> • County Fleet Maintenance Fluids Recycling • Employee Hazardous Materials Training • Roadside Cleanup • Evaluation, Implementation of Stormwater Pollution Prevention Plans for County Facilities • Bring One for The Chipper • Collection Centers • Existing Pond Water Quality Assessment • Vacuum and Jet Clean Storm Structures • Illegal Dumping Control 	Bartow County Solid Waste Director County Administrator/ Director, Water & Sewer Solid Waste Director Director, Water & Sewer Keep Bartow Beautiful Coordinator Solid Waste Director Road Dept. Director/ County Engineer Road Dept. Director/ Stormwater Superintendent of O & M Solid Waste Director	2004 2004 2004 2005 2005 2004 2005 2005 2005	2004-2006 2004-2008 2005 2006 2005 2004 2005-2007 2005-2008 2006	
Acquire lands along Etowah River for	Bartow County Greenspace	2004	2004	

greenspace and riparian buffer preservation in County	Committee			
Workshop on proper maintenance of septic systems for Allatoona Community Association homeowners	Keep Bartow Beautiful Coordinator	2006	2006	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Post Development Storm Water Management for New Development and Redevelopment	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Conservation Subdivision/ Open Space Development	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Illicit Discharge and Illegal Connection Ordinance	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Litter Control Ordinance	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Stream Buffer Protection Ordinance	Bartow County	2005	2005	
Stormwater Management Education and Outreach				
<ul style="list-style-type: none"> Complete Center for Watershed Protection's <u>Codes and Ordinances Worksheet</u> 	Bartow County, City of Cartersville	Summer 2006		
<ul style="list-style-type: none"> Consider Adopting 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u> where applicable 	Bartow County, City of Cartersville	2007-2008		
<ul style="list-style-type: none"> Implement education of community using After the Storm non-point source pollution video presentation on public access channels 	Bartow County, City of Cartersville	Ongoing		
<ul style="list-style-type: none"> Reconvene Stormwater Working Group to include all counties, municipalities in Coosa Valley RDC area 	Coosa Valley RDC, stakeholders	2006		
<ul style="list-style-type: none"> Will investigate 319 h non-point source 	Coosa Valley RDC, stakeholders	2006		Application deadline May 31, 2006. Yearly deadline.

pollution grant possibilities regarding funding for development of stormwater management training for municipal employees				
<p>Septic System Maintenance Education and Outreach</p> <ul style="list-style-type: none"> Investigate expansion of district-wide outreach component to homeowners to include those with existing systems Will investigate 319 h non-point source pollution grant possibilities regarding septic system maintenance and repair project 	<p>Coosa Valley RDC, stakeholders</p> <p>Coosa Valley RDC, stakeholders</p>	<p>2006</p> <p>2006</p>		<p>Application deadline May 31, 2006. Yearly deadline.</p>
<p>Riparian Buffer Education and Outreach</p> <ul style="list-style-type: none"> Consider adopting relevant principles as detailed in 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u> Continue education and outreach to local communities through USDA NRCS/FSA, County Extension Service Will investigate 319 h non-point source pollution grant possibilities regarding purchasing and distribution of education materials encouraging homeowners to develop, maintain riparian buffers 	<p>Bartow County, City of Cartersville</p> <p>USDA NRCS/FSA, County Extension Service</p> <p>Coosa Valley RDC, stakeholders</p>	<p>2007-2008</p> <p>Ongoing</p> <p>2006</p>		<p>Application deadline May 31, 2006. Yearly deadline.</p>
<p>Investigate Funding Sources</p> <ul style="list-style-type: none"> Will investigate 319 grant possibilities regarding development of a project to survey schools in Coosa Valley RDC service area to determine interest in and feasibility of water quality education, specifically on causes of non-point source pollution, importance of riparian buffers, and stormwater pollution prevention 	Coosa Valley RDC, stakeholders	2006		<p>Application deadline May 31, 2006. Yearly deadline.</p>

PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by Georgia EPD.



- Scheduled EPD Basin Group Monitoring ✦
- TMDL Completed □
- Revised TMDL Implementation Plan Accepted ◇
- Plan Status Evaluation Report ⊕
- Plan Update or Revision, if Necessary ○
- Project Attainment for Plans Prepared in 2006 ☆

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Date Submitted to EPD:	04/22/06	Revision:	01

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APPENDIX A.

STAKEHOLDERS

List the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Steve Bradley County Administrator	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5030	Bradleys@bartowga.org
Lamont Kiser Bartow County Engineer	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5067	kiserl@bartowga.org
Tammy Decker USDA Rural Development	12 Felton Place	Cartersville	GA	30120	(770) 386-3393	Tammy.decker@ga.usda.gov
Sherri Henshaw Coordinator, Keep Bartow Beautiful	P.O. Box 786	Cartersville	GA	30120	(770) 387-5167 Fax: 770.606.2382	henshaws@bartowga.org
Bobby Gay Zoning and Code Enforcement officer	30 Burge's Mill Road	Euharlee	GA	30145	(770) 386-1542 ext 210	code@euharlee.com
Edmund L. Mullinax, City of Cartersville	P.O. Box 1390	Cartersville	GA	30120	(770) 607-6296	emullinax@cityofcartersville.org
Lake Allatoona Preservation Society (contact Edmund L. Mullinax)	P.O. Box 1390	Cartersville	GA	30120	(770) 607-6296	emullinax@cityofcartersville.org
Gene Camp Bartow County Water System	P.O. Box 850	Cartersville	GA	30120	(770) 387-5170	campg@bartowga.org
Kenneth M. Akins Etowah Indian Mounds Site Manager	813 Etowah Indian Mound Road, S.E.	Cartersville	GA	30120	(770) 387-3747	Etowah_mounds@dnr.state.ga.us
Jim Stafford City of Cartersville Water Department	P.O. Box 1390	Cartersville	GA	30120	(770) 387-5653	jstafford@cityofcartersville.org
Kathy Floyd County Extension Agent	320 W. Cherokee Ave. Room 112	Cartersville	GA	30120	(770) 387- 5142	Kpfloyd@uga.edu
Katie Knowles USACE Allatoona Dam Natural Resources Spec.	P.O. Box 487	Cartersville	GA	30120	(678) 721-6738	Kathrine.m.Knowles@sam.usace.army.mil
Jim Shinall USACE Allatoona Dam Environmental Compliance Coordinator	P.O. Box 487	Cartersville	GA	30120	(678) 721-6716	James.t.shinall@sam.usace.army.mil
Michelle Simmons,	717 South Wall Street,	Calhoun	GA	30701	(706) 629-2582 X 3	Machelle.simmons@ga.usda.gov

USDA Natural Resource Conservation Service	Suite 1					
Pam Robinson, Environmental Health Dir.	P.O. Box 665	Cartersville	GA	30120	(770) 387-2614	pjrobinson@dhr.state.ga.us
Keith Gilmer Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	K_gilmer@gaswcc.org
John Loughridge Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	J_loughridge@gaswcc.org
Curt Gervich Etowah Habitat Conservation Program	P.O. Box 287	Acworth	GA	30503	(678) 801-4013	curt@etowahhcp.org
Joe Cook, Executive Director, or Katie Owens, Program Coordinator, Coosa River Basin Initiative	408 Broad St.	Rome	GA	30161	(706) 767-0497	crbi@coosa.org keady@coosa.org
Cindy Haygood Rolling Hills Regional Conservation and Development Council	P.O. Box 1550	Dallas	GA	30132	(770) 505-4288	Cindy.Haygood@ga.usda.gov

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**APPENDIX B.
UPDATES TO THIS PLAN**

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.

APPENDIX C.

0315010415 Two Run Creek Field Survey Photographs and Watershed Maps

Field Survey Photographs

1. 0315010415 Two Run Creek: Browns Loop-South: Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge 1 of 2.



2. 0315010415 Two Run Creek: Browns Loop-South: Bartow County Two Run Creek WPCP, permit # GA0020702, discharges into the creek at Brown's Loop-South road bridge 2 of 2.



3. 0315010415 Two Run Creek: Browns Loop-South: Cattle grazing in pastures along stream, have stream access.



4. 0315010415 Two Run Creek: Hwy 293 Bridge- Creek drains pasture seen in background.



5. 0315010415 Two Run Creek: Browns Loop- South- Good tree buffer, Stream bank accessible to wildlife, cattle fenced out of stream.



6. 0315010415 Two Run Creek: Browns Loop South- Stream bank accessible to wildlife.



7. 0315010415 Two Run Creek: Reynolds Bridge Rd- Good buffers, Stream bank accessible to wildlife.



8. 0315010415 Connesenna Creek: Old Rome Rd., water appearance clear to muddy, may be associated with land disturbing beyond bridge to east of this location.



9. 0315010415 Etowah River, Euharlee Creek to US Highway 411: Euharlee Road- River bank accessible to wildlife.



10. 0315010415 Etowah River, Euharlee Creek to US Highway 411: Hwy 411 Bridge crossing- River bank accessible to wildlife.



0315010415 Two Run Creek Watershed Map

